Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

PROBLEMS FOR SOLUTION.

ALGEBRA.

119. Proposed by **HARRY S. VANDIVER, Bala, Montgomery Co., Pa.**

Given $\tan x = x + \frac{x^3}{3} + \frac{2x^5}{3\times5} + \frac{17x^7}{3^2\times5\times7} + \frac{62x^9}{3^2\times5\times7\times9} \cdots$.

Find the general term and interval of convergence of this series.

120. Proposed by **JOSIAH H. DRUMMOND, LL. D., Portland, Me.**

A hollow sphere has within it a solid sphere; a quantity of water equal to $1/m$ of the capacity of the hollow sphere is poured in and just covers the solid sphere. Prove that there are two solid spheres, either of which answers the conditions; also find the maximum value $1/m$, beyond which the question is not possible.

*** Solutions of these problems should be sent to J. M. Colaw not later than July 10.

CALCULUS.

111. Proposed by **G. B. M. ZERR, A.M., Ph.D., Professor of Mathematics and Science, Chester High School, Chester, Pa.**

(a). Find the dimensions of a cup, capacity c, in the form of a frustum of a pyramid regular, of n faces, so that its internal surface is a minimum.

(b). Find the dimensions of a cup, capacity c, in the form of a frustum of a hyperbolioid or of a paraboloid, whichever it is, so that its internal surface is a minimum.

*** Solutions of these problems should be sent to J. M. Colaw not later than July 10.

MISCELLANEOUS.

91. Proposed by **ARTEMAS MARTIN, LL. D., U. S. Coast and Geodetic Survey Office, Washington, D. C.**

The following sides and area are given for a rational triangle in the table of rational scalene triangles on page 167 of Dr. Halsted's "Metrical Geometry" (Boston, 1881), viz.: sides, 21, 61, 65; area, 420. The same sides and area are given in Septimus Tebay's "Mensuration" (London and Cambridge, 1868), in a table on page 113.

The sides of this triangle can not all be correct because they are all *odd*.

Assuming that the *area* given is correct, it is required to determine the error in the sides.

92. Proposed by **J. T. COLE, Columbus, Ohio.**

A staff a=60 feet high, casting a shadow on a horizontal plane due north b=20 feet long, falls due northeast. Find the area covered by the shadow.

*** Solutions of these problems should be sent to J. M. Colaw not later than July 10.